



Mercury Measurement Workshop

Overview QuickSEM / M-324

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Description of Quick SEM™

- Time integrated mercury measurement (hours to weeks)
- Low-cost technique
- Minimal operator training required
- Embedded controller – external computer only required to download data



Mercury Traps

- Traps filled with iodine impregnated activated carbon
- Effective to 400 °F
- No sample train artifacts
 - For “dry” applications and when $T < 400^{\circ}\text{F}$, traps placed in duct at tip of probe
 - Other applications, probe heated to minimize mercury collection in probe
- Captures total vapor phase mercury

Trap Sizes

- **Large Trap**
 - Designed for up to 1 month sampling periods
 - 11 mm (0.43") diameter, 200 mm (8") long
- **Small Trap**
 - Designed for up to 24 hour sampling periods
 - 6 mm (0.24") diameter, 150 mm (6") long

Upgraded Equipment



- Automatic sample flow control
- Adjust sample flow rate based upon duct flow
 - Pitot on sampling probe or signal from stack CEM
- Report total flow at standard conditions
- Team with equipment vendor to minimize period between development and availability

QSEM Summary

- **Accurate Results**
 - Provides consistently better results than instruments
- **Reliable operation by various groups**
 - Could be operated by on-site personnel
- **Portable**
- **Low maintenance**
- **Low-cost equipment**
- **Traps and analysis available from Frontier Geosciences**
- **Equipment support through Apex Instruments**